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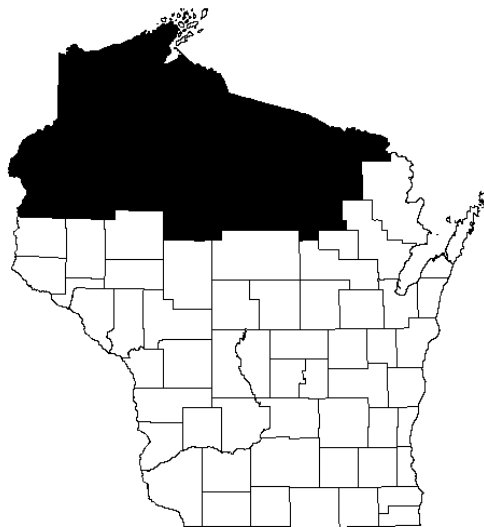
Northern Region Forest Health Report

*Wisconsin Department of Natural Resources
Division of Forestry*

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Woolly Alder Aphids

by Shane Weber

A strange phenomenon is occurring in our swamps as the trunks and branches of tag alders are becoming flecked as if for Christmas. This strange snow white flecking is actually composed of a mass of small living creatures—woolly alder aphids. These small insects feed on the sap of the alders during the fall and spring, and their bodies are covered with thick patches of white woolly wax. They overwinter in such dense colonies that the branches of alders turn snow white and really quite thick and fuzzy. Their feeding appears to be of little consequence.

After spending October through April in tag alder swamps, these strange aphids will migrate to their summer hosts, silver and red maples. If possible, the summer form of these critters is even more bizarre. The summer aphids grow long tendrils of white wax making them look like armies of miniature white octopi attacking the maple leaves. The summer aphids actually do a little damage to the trees as their feeding causes some premature leaf drop and many curled up leaves in the crown. The summer feeding also produces copious amounts of sticky pale blue honeydew. Anything underneath infested trees in June will be covered with this messy goo which vaguely resembles dried skim milk.

The woolly alder aphid is making a comeback after several down years caused by predation by our new buddy, the multicolored Asian lady beetle. The good news is this critter does not cause enough harm to either of its hosts to merit chemical control. The better news is that the honeydew is water soluble washing off in a hose spray of hot water.



Figure 1. Woolly alder aphids covering a Taylor County alder.

Acorn Pip Galls

Though this news is a little late, I'm hoping there is someone out there who has the following burning question still in their mind from this past summer: Why were all the red oaks dropping their acorns so early? I eventually identified the guilty party as a little wasp, thanks in large part to USFS entomologist Steve Katovich.

The oaks affected by this cynipid wasp (*Callirhytis operator*) were in the red oak group, and oaks throughout Oneida County were infested. Galls formed by this wasp were small, wedge-shaped galls on the acorn right underneath the juncture of the cap and nut (Figure 2). There was usually one gall per acorn, but I did see up to five on a single acorn. Though not a lot of physical damage occurs to the acorn from these galls, according to the literature, infested acorns are not viable. This issue was first reported in mid-August, and at least 50% all grounded

acorns surveyed from that time to the end of September were infested. Acorns were reported to be dropping from trees as early as mid-July.



Figure 2. Acorns with pip galls from the pip gall wasp: An acorn with a notch left from a pip gall that fell out (left), a pip gall still on an acorn (center), and a dissected gall, showing the wasp larva occupying the center (right).

Thinning Clumps in Northern Hardwoods – Effects on Tree Health

Many of you have been marking in northern hardwoods lately, and there is little doubt that you have come across a clump of trees that grew from the same mother stump or forked close to the ground. From a tree health perspective, there are instances where thinning a clump will be detrimental for the residual tree, and there are instances where thinning clumps will have no effect on the residual.

Situations where clump thinning is okay

Clumps of pole-sized or larger trees that lend themselves to thinning are those whose members are (a) connected below the root collar and (b) have a lot of space between them for cutting (Figure 4). In other words, a low, wide U-shaped union between trees allows for thinning clump members. A connection below the root collar means the stem wood of each clump-member is not connected, so decay fungi will not be able to advance directly from stem to stem. Regarding spacing, operability of thinning clumps must be taken into account. If a wound is made on a residual tree, discoloration will likely occur in it, and decay may occur, depending on the size of wound, vigor of the residual, and species. See Figure 3 for an example of a clump residual where even a manual feller could not avoid wounding the residual.



Figure 3. Note the horizontal wound (arrow) still exposed from a manual feller's chainsaw on this residual. The residual had a partner that attached above the root collar in a V-shaped union—not a good clump to thin.



Figure 4. These trees were connected below their root collars, and there was enough space between their stems so a feller could remove one tree without injuring the residual.

Young clumps with sufficient light can be thinned, because they are vigorous. Vigorous trees can quickly form woundwood over wounds; thus compartmentalizing (walling-off) any potential decay fungi. For this reason, Chapter 40 in the DNR's Silviculture Handbook recommends thinning basswood sprout clumps to 1 or 2 stems before the trees reach 10 years old. A USFS publication makes a similar recommendation—to thin sprout clumps before they reach 20 years old.

Situations where clump thinning is a bad idea

There is one situation where removal of one member of a tree clump could actually threaten the life of the residual members of that clump before the next stand entry. That instance is removal of a sugar maple in the spring or early summer, which had fused wood with another sugar maple. The residual sugar maple, after losing its beloved congenitally united twin, becomes susceptible to a fungal wilt disease called sapstreak (*Ceratocystis virescens*) (Figure 6). Sapstreak disease kills most susceptible sugar maples 6 to 8 years after infection. Studies have demonstrated the sapstreak pathogen infects residual sugar maples after their clump partners are removed in the spring or summer. Therefore, it is best to either remove all members of a sugar maple clump or leave all of them.

The last tree health issue to consider when thinning clumps is wood decay. As mentioned above, thinning stems that are joined below the root collar should not cause decay to advance into the residual stem. Stems that are joined above the root collar share a common pith and “heartwood.” In that case, decay from the cut stump will eventually progress into the heartwood of the residual tree (Figures 5 & 7). The amount of decay that will occur in the residual depends on the size of the cut stump (the larger, the more decay), its age (the older, the more decay), the fungal decay species, and the tree species (See page 40-69 in the



Figure 5. Cut clump members were connected above the root collars (arrows). The result is two decaying butt-logs.

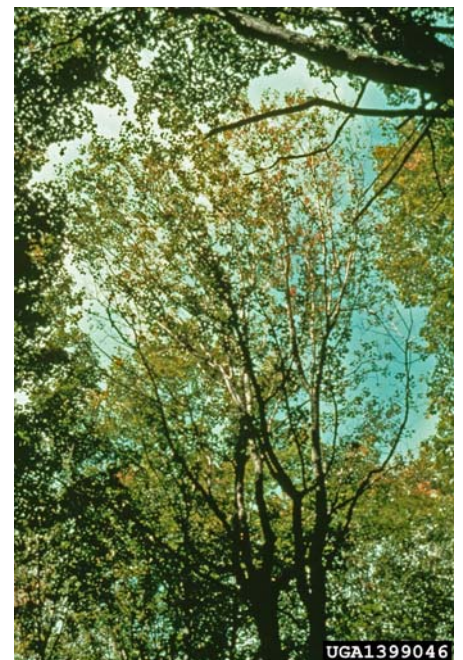


Figure 6. A sugar maple showing stunted discolored leaves, symptoms of sapstreak disease (Mielke, USFS, bugwood.org), which could enter a residual clump member from a connected cut stump.

Silviculture Handbook for a relative decay rate guide). Chances are a residual clump-member will not become a high risk tree before the next stand entry due to rot (barring no canker-rot infection), but chances are great that thinning a clump will reduce the residual's butt-log value. For instance, one study found roughly 25% of residual oak clump-members had 3 feet of decayed wood in their butt-log 16 years after thinning. Also the long-range chance of a residual clump member becoming a high-risk tree due to decay is moderate.

In conclusion, from a tree health perspective and a butt-log quality

perspective, it is best to maintain all clump-members or remove all of them. Removing an entire tree clump will add the additional benefit of a nice canopy gap for regeneration. The exception—if a clump member connects to its partners below the root collar, there is a lot of space between the partner stems, and it falls into the standard order of removal (specified in chapter 24 of the Silviculture Handbook), removing it would do little harm. Roughly speaking, you can work with low, U-shaped unions, but with V-shaped unions, take all or leave all is a good policy.



*Figure 7. The mossy-top conk (*Oxyporus populinus*) accessed this maple through a cut clump member. This fungus indicates white heart-rot 2-4 feet above and below the conk (see 40-69 in the Silviculture Handbook).*

Emerald Ash Borer Update

A new emerald ash borer infestation was reported in Delta County in Michigan's U.P. on October 8 near Garden Corners. This is about 70 miles, as the EAB flies, to Niagara, Wisconsin. If humans were wiped out tomorrow by a vicious viral epidemic, EAB would get to Niagara in roughly 140 years. However, I'd bet humans are going to be around for the next few years, and I'd bet EAB will get to ash trees near Niagara sooner than 140 years. The reason why is because humans continue to move EAB around. Please, educate as many people as you can that if we can work together at NOT moving firewood around, we can keep EAB out of Wisconsin's northwoods for a long time (even Niagara). Incidentally, a second EAB infestation was reported October 31 in Schoolcraft County, adjacent to the Garden Corners find.

A private residence in Kenosha County was reported to have two infested ornamental ash trees on October 21 (<http://emeraldashborer.wi.gov/pdf/KenoshaEAB.pdf>). Fortunately, these trees were transplanted from an infested Illinois nursery *after* adult EAB flight, which means the Kenosha County infested trees did not threaten the immediate area's ash. The infested ash trees were destroyed and no longer threaten Wisconsin's ash trees.

Ash trees surrounding the infested sites in Ozaukee and Washington counties were surveyed for EAB-infestation symptoms soon after the initial finds. Two-thirds of those trees have been closely inspected for EAB, and none have been positive for EAB. While DATCP finishes closely inspecting the rest of the trees, state officials continue to discuss how to deal with the generally infested locations in Ozaukee and Washington counties. Remember that EAB adults won't emerge from infested trees until late May.

As a reminder, DNR has guidelines for preparing your forest for EAB infestation. Please review them at <http://www.dnr.wi.gov/forestry/fh/PDF/EABWIManagementGuidelines.pdf>. Most importantly, we do not support liquidation of ash trees. Secondly, EAB's activity in Michigan suggests it will eventually spread into most areas of Wisconsin. One way to slow that spread is to reduce EAB's food supply, so reduction of the percentage of ash in forests by removing high risk and low vigor ash will (1) help slow the spread of the pest to other parts, and (2) ensure that an infested forest is still fully stocked if all the ash trees were to die. EAB presents a big challenge to forest management in Wisconsin—while reducing the proportion of ash, one needs to ensure adequate post-harvest basal area, adequate potential post-infestation basal area, and a maintenance of ash on the landscape.

Lastly for the urban ash tree fans, a special pesticide registration has been approved for TREE-age use in Wisconsin. The active ingredient of TREE-age is emamectin benzoate, and it can be added to the list of chemicals which can be used to protect ash trees against EAB. Click on the following link to see some of those other pesticides:

http://www.entomology.wisc.edu/emeraldashborer/article_052407.pdf.

Gypsy Moth Suppression Program Deadline

The deadline for counties to apply for the gypsy moth suppression program is December 5. Program details can be viewed at <http://dnr.wi.gov/forestry/fh/gm/grants.htm>.

Entertaining Forest Health Links

- *Asian Longhorned Beetle Impersonation* (thanks to Bill McNee for this link):
<http://www.youtube.com/watch?v=KaVxIcmrG1I>
- *New research on the oldest tree – a spruce! (thanks to James Jacobs for this link):*
<http://www.telegraph.co.uk/scienceandtechnology/science/sciencenews/3339982/World%27s-oldest-tree-discovered-in-Sweden.html>

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